

US ENVIROMENTAL PROCT
AGENCY JAMES JOHNSON
FEDERAL ON-SCENE COORD
212 LITTLE BUSSEN DRIVE
FENTON, MO 63026

Report Date (YYYY-MM-DD)	2014-07-31
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Dosimeter Received	2014-07-29
QC Release	CHA
Analytical Work Order	1420910062

LANDAUER®

Landauer, Inc., 2 Science Road
Glenwood, Illinois 60425-1586
www.landauer.com
Telephone: (708) 755-7000
Facsimile: (708) 755-7016
Customer Service: (800) 323-8830
Technical: (800) 438-3241

Environmental Dosimetry Report

Account : 708876 Subaccount : 1431322 Series: X9

Location ID Number	Dosimeter Type	Identifier (Client Supplied)	Exposure (Ambient Dose mrem)		Net Cumulative Totals (mrem)			Inception Date (YYYY-MM)	Serial Number
			Gross	Net	Quarter to Date	Year to Date	Permanent		
Monitoring Period:			2014-06-01 to	2014-06-30	Q2	2014			
00000	V03NH	Deploy Control						2014-05	EX00064792K
	V03NH	Control Dose Used	13.3						
00001	V03NH	AREA 1	14.7	1.4				2014-05	EX00022803Z
00002	V03NH	AREA 2	15.6	2.3				2014-05	EX00039622U
00003	V03NH	AREA 3	14.7	1.4				2014-05	EX00021052D
00004	V03NH	AREA 4	17.0	3.7				2014-05	EX00019874L
00005	V03NH	AREA 5	17.4	4.1				2014-05	EX00010485Z
00006	V03NH	AREA 6	17.7	4.4				2014-05	EX000243243
00007	V03NH	AREA 7	14.9	1.6				2014-05	EX00011595V
00008	V03NH	AREA 8	15.7	2.4				2014-05	EX00008409T
00009	V03NH	AREA 9	15.3	2.1				2014-05	EX000082245
00010	V03NH	AREA 10	16.0	2.7				2014-05	EX00014838M
00011	V03NH	AREA 11	16.4	3.1				2014-05	EX00058420Z
00012	V03NH	AREA 12	15.2	1.9				2014-05	EX00014219Y
00013	V03NH	AREA 13	14.4	1.1				2014-05	EX000270436
00014	V03NH	AREA 14	13.8	0.5				2014-05	EX00002859M
00015	V03NH	AREA 15	13.4	0.2				2014-05	EX00064621V

General Information

The Environmental dosimeter is for both indoor and outdoor use, and is designed to withstand extremes of temperature, humidity, precipitation, and other environmental conditions. InLight dosimeters are built on an assembly of a case component with copper and plastic filters along with a four-positioned aluminum oxide detector slide component. Both the case and slide are uniquely bar coded with serial numbers for chain of custody and sensitivity identification. The InLight dosimeter is sealed within a heavy-duty vinyl tamper resistant pouch that has multiple slots to permit several methods of attachment for easy deployment.

Technical Specifications

- Fully meets ANSI N545-1977, NRC Regulatory Guide 4.13, and HPS Draft Standard N13.29 for environmental dosimetry.
- Minimum Detectable Dose - nominally 0.1 mrem (1 μ Sv), reporting to tenths of a millirem ambient dose equivalent.
- Detection Capabilities:
 - Photons (x and gamma rays) with energies above 15 keV nominally: 0.1 mrem to 1000 rem (1 μ Sv to 10 Sv).
 - Beta particles with energies greater than approximately 500 keV average energy: 20 mrem to 1000 rem (200 μ Sv to 10 Sv).

Control Dosimeter

A minimum of two control dosimeters are provided per shipment. The first is for field deployment/retrieval used to measure exposure during shipment and placement/collection. The second is for transit used to measure exposure during shipment only. Both control dosimeters assigned to a shipment should accompany that shipment both from and to Landauer. Do not use the control dosimeters for any other purpose. Store dosimeters away from radiation when not in use along with the control dosimeter(s) of the same use date.

Dosimetry reports show gross and net dosage. Gross dosage includes the dosage to the controls. Landauer's background subtraction protocol is:

- Subtract the deployment/retrieval control; or if not returned to Landauer
- Subtract the transit control.

Dosimetry Report Information

Location ID Number
Unique number assigned by Landauer.

U.S. Patents
6,316,782; 6,127,685; 5,892,234

Dosimeter Type

Dosimeter Type	Analytical Sensitivity	Minimum Detectable Dose Level (mrem)
V03NH	High	0.1
V03NN	Standard	5.0
V06NH	High	0.1
V06NN	Standard	5.0

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Identifier
Location name supplied by customer.

Exposure Ambient Dose (mrem)
Gross: Gross exposure before control subtraction.
Net: Net exposure after control subtraction.

Net Cumulative Totals (mrem)
Quarter to Date, Year to Date, and Permanent are accumulated net ambient exposure.

Inception Date
The date Landauer began keeping dosimeter records for a given dosimeter for a monitoring location on the current account.

Serial Number
Dosimeter serial number.

TETRA TECH
415 OAK ST
KANSAS CITY, MO 64106

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Account : 708876

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			Gross	Net	Quarter to Date	Year to Date	Permanent		
Monitoring Period: 00000	V03NH	Transit Control	2014-06-01 to	2014-06-30	Q2	2014		2014-05	EX000583102

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